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Japanese Laid-Open (Kokai) Patent No. 64-94056

Date of Publication : May 27, 1985

Application Number : 58-201437

Date of Filing : October 27, 1983

Inventor : Kenjiro Arimori

Applicant : Kuraray Chemical Co. Ltd.

**I. TRANSLATION OF PAGE 1, LOWER RIGHT COLUMN, LINE 13 TO PAGE 2, UPPER LEFT COLUMN, LINE 4.**

However, broccoli has special characteristics that, even though it is preserved [in a plastic bag] with a freshness maintaining agent, its flower buds can easily yellow and its commercial value can be lowered in a short time. Then bad odor can be produced and the commercial value can be completely nullified. If preserved at 20°C, flower buds begin to yellow in 30 hours, and completely yellow and produce bad odor in 45 hours. This is because a broccoli breathes extremely actively and produces large amount of carbon dioxide. The density of carbon dioxide can reach 10-13% and then the density of oxygen consumed is lowered to less than 5%. It is thought that[, in this atmosphere,] molecular breathing is induced and causes production of organic gas which is a source of bad odor.

**II. TRANSLATION OF PAGE 2, LOWER RIGHT COLUMN, LINE 19 TO PAGE 3, UPPER RIGHT COLUMN, LINE 18.**

By this invention, broccoli, which easily changes color and produces a bad odor and is considered to difficult produce in maintaining freshness, can be preserved for 5 to 7 days in a fresh manner, then commercial value of broccoli can be remarkably increased and the distribution area can be expanded.

Examples of the present invention are explained below.

**Example 1**

An absorbent with a urethane foam having 2mm in thickness and 150mm by 200mm in size, to which 4g of active carbon having 1,700

m<sup>2</sup>/g specific surface area and having particle size of 90% passing through 100 mesh was added, was enclosed in a bag formed by dual axis extended polypropylene film with a size of 670mm by 550mm and a thickness of 25 $\mu$ , together with 2 kg of broccoli. The bag was sealed and preserved at a room temperature. Even after 7 days, yellowing of flower buds [of broccoli] and bad odor were hardly observed.

#### Example 2

The amount of active carbon was made to 3g as to the absorbent of Example 1, and further 2g of hydrated lime was added to the urethane foam. Broccoli was preserved in a sealed bag under the same conditions of example 1 other than the conditions above. After 8 days, no yellowing and odor were observed at all.

#### Example 3

An absorbent with a urethane foam having 2mm in thickness and 150mm by 250mm in size, to which 4g of active carbon having 1,700 m<sup>2</sup>/g specific surface area and having particle size of 90% passing through 100 mesh was added, was enclosed in a bag of polyethylene film with a size of 670mm by 550mm and a thickness of 30 $\mu$ , together with 2 kg of broccoli. The bag was sealed and preserved at a room temperature. Even after 7 days, no yellowing of flower buds [of broccoli] and bad odor were observed at all.

#### Example 4

A bag having film with 30 $\mu$  in thickness of ethylene-vinyl acetate copolymer containing 17% vinyl acetate was used, instead of a film of dual axis extended polypropylene of Example 1. Even after 7 days, no yellowing of flower buds and bad odor were observed at all.

Comparative Example

Under the same conditions of Example 1 excepting that the absorbent was not used, broccoli was preserved. After one day, yellowing of flower buds [of broccoli] and bad odor were observed. After 2 days, the flower buds yellowed completely and extreme bad odor was produced.

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⑩ 日本国特許庁(JP)

⑪ 特許出願公開

⑫ 公開特許公報(A) 昭60-94056

⑬ Int.Cl.

識別記号

庁内整理番号

⑭ 公開 昭和60年(1985)5月27日

A 23 B 7/144  
7/00

1 0 1

6904-4B  
6904-4B

審査請求 未請求 発明の数 1 (全3頁)

⑮ 発明の名称 ブロッコリー保存袋

⑯ 特 願 昭58-201437

⑰ 出 願 昭58(1983)10月27日

⑱ 発 明 者 有 森 健 二 郎 茨木市南春日丘1-17-20 ガーデンハイツ清水105

⑲ 出 願 人 クラレケミカル株式会 備前市鶴海4342  
社

⑳ 代 理 人 弁理士 小田中 壽雄

## 明 細 書

## 1. 発明の名称

ブロッコリー保存袋

## 2. 特許請求の範囲

ポリエチレン、ポリプロピレン、ポリブタジエン及びエチレン・酢酸ビニル共重合体よりなる膜より選ばれた1つのポリマーよりなる厚さ15～50μのフィルムの包装膜に、シート状の発泡体に粉末活性炭或いは更に消石灰を混合せしめた吸着剤及びブロッコリーを密封せしめてなるブロッコリー保存袋。

## 3. 発明の詳細な説明

本発明はブロッコリーの鮮度を長期間保持する保存袋に関するものである。最近青果物は通常、鮮度保持のため或いは産地産で保存しめいようプラスチックフィルムで包装した形態で流通している。しかし、内容物が腐敗し易いものは腐敗、悪臭等が発生しめい。

これは密封された青果物の呼吸作用の結果、内部の雰囲気組成が、その保存に不適当となるた

めと考えられる。これらの保存に適した雰囲気は青果物の種類によって異なるが、一般に炭酸ガス濃度が8%程度以下、酸素濃度は5～6%前後、湿度は80～95%が好適であるとされている。しかし、呼吸作用が旺盛なもの或いは特に腐敗し易いものは炭酸ガス濃度が10%近くに達する場合があり、または湿度が過飽和となって水滴がたまり、腐敗、腐敗、悪臭等の発生が促進されることが多い。近年これらの場合、小量の活性炭を和紙に包んで青果物と共にプラスチックフィルムで密封する方法が多く採用されており、腐敗、悪臭を防止上著しい効果認められ、長期保存が可能となっている。しかし、ブロッコリーは非常に特異な性状を示し、通常の鮮度保持剤を封入して密封しても、花わいが黄変しめく短時間に商品価値が低下し、次いで強い悪臭が発生して商品価値が全く失われる。20°Cで保存した場合、30時間で花わいの黄変が発生し、45時間すなわち約2日で完全に黄変し悪臭が発生する。これはブロッコリーの呼吸作用が非常に旺盛なため多量の炭酸ガ

特開昭60-94056(2)

スが発生して湿度10～13%にも達する著しい特異な性質を示し、一方酸素が消費されて5%以下となる。このため分子内呼吸を抑制し、悪臭の原因となる有機ガスを発生するためと考えられる。ブロッコリーの取入れから流通消費迄の期間を考えた場合5～6日間の鮮度保持が可能となれば、流通範囲及び消費量の大巾な伸長を見込めるといわれ、その解決がもたれていた課題である。

これらの観点から包装材として炭素の透過を抑制しうる如き材質及び厚さのプラスチックフィルムの選択と、更に内部に蓄積される炭酸ガスを除去する方法について研究した結果、ブロッコリーを特定の種類及び厚さを有するプラスチックフィルムで包装し、中に接触面積が大きく且つ、活性炭保有の表面積が大きく、従って、従来の鮮度保持期より一層吸着速度が高い吸着剤を使用し、または更に炭酸ガス吸着剤を加えることにより、相当長期間鮮度保持が可能となって、著しく商品価値を高めうることを見出し本発明に到達した。

すなわち、ポリエチレン、ポリプロピレン、ポ

リブタジエン及びエチレン・酢酸ビニル共重合体よりなる群より選ばれた1つのポリマーよりなる厚さ15～50μのフィルムの包装袋にシート状の発泡体に粉末活性炭或いは更に消石灰を添付せしめた吸着剤及びブロッコリーを密封せしめてなるブロッコリー保存袋である。

以下更に本発明について詳しく説明する。

ポリエチレン、ポリプロピレン及びポリブタジエンは物性の異なる種々のフィルムが市販されているが、厚さ15～50μの範囲内であれば充分酸素シールの目的を達しうる。厚さ15μ以下になると花らんが買入する場合があり、また50μ以上になると、包装袋内面に常に水滴を結んだ状態となって悪臭を発生し易く、本発明の用途に不適当である。また包装用フィルムに使用されるエチレン・酢酸ビニル共重合体の組成は、通常酢酸ビニル含有率5～30%である。

これはポリエチレン、ポリプロピレン、及びポリブタジエンと異なり、或る程度酸素透過性を有するが、水分透過性も相当ありまた呼吸作用に伴

って発生するエチレンも透過除去する作用がある。エチレンは特に植物ホルモンとして青果物の成熟促進を促進する作用があるとされ、該フィルム物性は鮮度保持の促進と阻害の両面が考えられるが、実際に使用した結果、良好な結果が得られている。

吸着剤は多孔質発泡体に活性炭粉末を含浸せしめたものである。発泡体は連続気泡で表面積が大きくなればよく、特に材質は限定しないが、ポリエーテル系或いはポリエステル系のクレタフォームが好適である。また活性炭の原料・性状は特に限定しないが、ヤシ殻を原料として賦活度を高めた比表面積1,500～1,700 $\text{m}^2/\text{g}$ の高性能活性炭で且つ100メッシュパス程度の微粒子が好ましい。発泡体への含浸量は40～60%程度が適当である。本発明では、連続気泡型発泡体による表面積の増大、比表面積が大きく且つ微粒子状活性炭を使用して、著しくガス吸着速度を高め、鮮度保持の目的を達することができた。発泡体には更に消石灰を含浸せしめることもでき、その場合炭酸ガスの吸収能力が著しく増加する。吸

着剤は発泡体のため外気との接触面積が著しく大きいと相まって、炭酸ガス等の吸着除去に達しており、更にブロッコリーと共に密閉する関係上シート状かつ伸縮性を有する形態が好ましい。尚発泡体には不織布或いは通気性がある紙等も含まれる。

吸着剤の使用量はブロッコリー2 $\text{kg}$ に対して、厚さ2mm、150×200mmのシート1～4枚あるが2～3枚が好適である。本発明におけるプラスチックフィルムの包装形態はシュリンク包装、ストレッチ包装のほかヒートシール法或いは開口部を縫でしばって密封する方法等も可能である。また本発明は、ライナーに直接ダイレクトしたり微細フィルムを含むダンボール箱に入れ合せ目をシールする場合も含んでいる。このような場合ブロッコリーはプラスチックフィルムの袋に入れることなしに直接ダンボール箱に入れる方法で使用できる。

本発明によれば青果物の中でも特に変色、悪臭発生を起し易く、従来鮮度保持が困難とされてい

たブロッコリーを5日～7日間新鮮な状態で保つことが可能となり、これによりブロッコリーの商品価値を著しく高め流通範囲を拡大することができるようになった。

以下本発明の実施例について説明する。

#### 実施例 1

大きさ670×550mm、厚さ25μmの二軸延伸ポリプロピレンフィルムの包装袋に大きさ150×200mmのウレタンフォームに比表面積1,700m<sup>2</sup>/g、100メッシュ、バス90%以上の活性炭4gを添着させた吸着剤とブロッコリー2kgを入れて密封し、常温で保持したが、7日間経過しても花らの黄変及び悪臭は殆んど認められなかった。

#### 実施例 2

実施例1の吸着剤において活性炭添着量を3g及び消石灰2gを添着した他同一条件でブロッコリーを密封保持したところ、8日間経過しても花らの黄変及び悪臭は全く認められなかった。

#### 実施例 3

大きさ670×550mm、厚さ30μmのポリエチ

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レンフィルムの包装袋に、長さ2m、大きさ150×250mmのウレタンフォーム、表面積1,700m<sup>2</sup>/g、100メッシュ、バス90%以上の活性炭4gを添着させた吸着剤とブロッコリー2kgを入れて密封し、常温で保持したが7日間経過しても花らの黄変及び悪臭の発生は全く認められなかった。

#### 実施例 4

実施例1において二軸延伸ポリプロピレンフィルムの代りに厚さ30μm、酢酸ビニル含有率17%のエチレン酢酸ビニル重合体フィルムを使用した結果、7日間経過しても花らの黄変及び悪臭の発生は全く認められなかった。

#### 比較例

実施例1において吸着剤を使用しなかった他同一条件でブロッコリーを保存した結果1日間で成程度の花らの黄変及び悪臭が認められ、2日間で完全に黄変し、著しい悪臭を発生するようになった。

特許出願人 クラレケミカル株式会社

代理人 弁護士 小田中 博 雄

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CLM What is claimed is:

1. A compound of formula ##SPC18## wherein R.sup.1 and R.sup.2 are methyl or ethyl; X and X' are bromo, chloro or fluoro; Y is hydrogen, bromo or chloro; and

4. A compound according to claim 1 which is 2-(3,5-dichlorophenyl)-4,4-dimethyl-5-chloro-5-dichloromethyloxazoline and

5. A compound according to claim 1 which is 2-(3,5-dichlorophenyl)-4,4-dimethyl-5-bromo-5-dibromomethyloxazoline and its hydrobromide.

INCL INCLM: 260/307.000F

NCL NCLM: 548/237.000

IC [1]

ICM: C07D085-36

EXF 260/307F

ARTU 122

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L38 ANSWER 31 OF 32 COPYRIGHT 1995 EPO

AN 9053660 INPADOC UP 880412

TI BAG FOR PRESERVING BROCCOLI SPROUTS.

IN ARIMORI KENJIROU

INS ARIMORI KENJIROU

PA KURARE CHEMICAL KK

PAS KURARE CHEMICAL KK

DT Patent

PIT JPA2 DOCUMENT LAID OPEN TO PUBLIC INSPECTION

PI (JP 60094056) A2 850527

AI JP 83-201437 A 831027

PRAI JP 83-201437 A 831027

OSCA 103:161525

OSDW 85-162814

OSJP 090237C000002

IC ICM (4) A23B007-144

ICS (4) A23B007-00

L38 ANSWER 32 OF 32 COPYRIGHT 1995 JPO and Japio

AN 85-094056 JAPIO

TI BAG FOR PRESERVING \*\*\*BROCCOLI\*\*\* \*\*\*SPROUTS\*\*\*

IN ARIMORI KENJIRO

PA KURARAY CHEM KK, JP (CO 423550)

PI JP 60094056 A 19850527 Showa

AI JP 83-201437 (JP58201437 Showa) 19831027

SO PATENT ABSTRACTS OF JAPAN, Unexamined Applications, Section: C, Sect. No. 305, Vol. 9, No. 2371, P. 2 (19850924)

IC ICM (4) A23B007-144

ICS (4) A23B007-00

CC 11.4 AGRICULTURE, FORESTRY, AND FISHERY - Food products

14.5 ORGANIC CHEMISTRY - Microorganism industry

31.2 PACKING - Container

AB PURPOSE: A broccoli sprout product preserved in bag capable of preserving freshness for a long period, obtained by sealing up

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

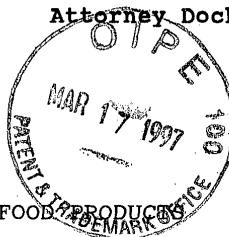
Attorney Docket No. 046585/0102

In re patent application of  
Jed FAHEY et al.

Serial No. 08/528,858

Filed: September 15, 1995

For: CANCER CHEMOPROTECTIVE FOOD PRODUCTS



DECLARATION OF PAUL TALALAY  
UNDER 37 C.F.R. § 1.132

I, Paul Talalay, being duly warned, hereby declare and say:

1. I am a citizen of the United States of America, and reside at 5512 Boxhill Lane, Baltimore, MD 21210.

2. I am John Jacob Abel Distinguished Service Professor, Department of Pharmacology and Molecular Sciences, Johns Hopkins University School of Medicine, Baltimore, Maryland 21205. I am a member of the National Academy of Sciences of the United States, a Member of the American Philosophical Society founded in Philadelphia for the Promotion of Useful Knowledge, and a lifetime Professor of the American Cancer Society.

3. I am a medical scientist who has been involved for the last 19 years in devising chemical and dietary strategies for reducing the risk of human cancer.

4. I am a co-inventor named in U.S. application serial No. 08/528,858 ("the application"). In relation to the application, I have reviewed an Official Action, mailed December 24, 1996, and the prior art cited therein, and I make the following observations.

5. None of the prior art references cited by the examiner in the Official Action, either alone, or in combination, teach or suggest the claimed methods for preparing food products

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comprised of the designated cruciferous sprouts, or extracts made from these sprouts.

6. The claimed methods of the application provide food products that not only contain unexpectedly high levels of anticarcinogenic Phase 2 inducer activity, but also contain unexpectedly low levels of potentially carcinogenic Phase 1 enzyme inducer activity. The sprouts and their extracts are therefore both qualitatively and quantitatively radically different in their content of enzyme inducer activities compared to mature, market stage vegetables.

7. There is a continuing proliferation of epidemiological studies that demonstrate an inverse relation between the quantity of vegetables consumed and the risk of cancer. Furthermore, several of these studies emphasize the protective effect of cruciferous vegetables, specifically, and demonstrate a dose dependence of the magnitude of the effect. Consumption of >425 g/wk of mature, market stage *Brassica* sp. reduces the cancer odds ratio to approximately 0.5 (50% risk reduction) for colon cancer in comparison to the consumption of <125 g/wk. Kune et al., *Nutr. Cancer* 9: 21-42 (1987). The odds ratios for colon cancer in relation to vegetable consumption was determined. Graham et al., *J. Natl. Cancer Inst.* 61: 709-714 (1978). Individuals who ate an average of 0-20, 21-40, 41-60 and more than 61 servings per month had odds ratios of 1.00, 0.66, 0.57 and 0.47 respectively. If one extrapolates the results of Graham, a 75% reduction in cancer risk would require consumption of perhaps 750 g (1.5 lbs.) of vegetables per day. The results of 7 cohort studies and 87 case-control studies have been summarized. See Verhoeven et al., *Cancer Epid. Biomarkers & Preventions* 5: 733-748 (1996). Cohort studies showed: inverse associations between the consumption of cabbage, cauliflower and broccoli and risk of

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lung cancer; between consumption of brassica vegetables and risk of stomach cancer; between broccoli consumption and risk of all cancers taken together and between brassica consumption and the occurrence of second primary cancers. They conclude that a high consumption of brassica vegetables is associated with a decreased risk of cancer.

8. It is impractical for most individuals to consume the large quantities of market stage broccoli or other vegetables to achieve maximum protection, because the quantity of fiber and other phytochemicals that need to be consumed can cause bowel irritation and/or flatulence.

9. Cruciferous sprouts and sprout extracts prepared according to the claimed methods provide 20 to 50-fold higher levels of Phase 2 enzyme inducer activity than mature market stage cruciferous vegetables. The data from Tables 1 and 3 of the application are summarized in APPENDIX B1 attached hereto. A significant health benefit can be realized through ingestion of small quantities of cruciferous sprouts, or sprout extracts, prepared according to the claimed methods. The same health benefits can only be realized, if at all, through the ingestion of intolerably large quantities of market stage vegetables that contain significantly lower quantities of anticarcinogenic Phase 2 inducer activity compared to the sprouts prepared according to the application.

10. For purposes of illustration, I determined in one experiment that 3 grams of 3-day old broccoli sprouts, or 150 milligrams of a lyophilized hot water extract made from 3-day old broccoli sprouts, contain the same quantity of Phase 2 enzyme inducer activity as 150 grams of mature market stage broccoli. Phase 2 enzyme inducer activity is measured in the Hepa 1c1c7

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murine hepatoma cells grown in 96-well microtiter plates according to the method of Prochaska et al., *Anal. Biochem.* 169: 328-336 (1988). One unit of Phase 2 enzyme inducer activity is defined as the amount that when added to a single microtiter well, doubles the quinone reductase activity. The quantity of mature market stage broccoli, sprouts and sprout extracts that must be consumed to realize the same health benefit (2-1/4 million units of anticarcinogenic Phase 2 enzyme inducer activity) is shown in APPENDIX B2 attached hereto.

11. The methods of the application also provide food products comprised of certain cruciferous sprouts and sprout extracts that do not contain significant levels of indole glucosinolates which break down to Phase 1 inducers. Phase 1 enzymes (cytochromes P-450) functionalize compounds, usually by oxidation or reduction. Although one role of Phase 1 enzymes is to detoxify xenobiotics, several cytochromes P-450 activate procarcinogens to highly reactive ultimate carcinogens.

12. Attached hereto as APPENDIX B3 are graphs showing comparative paired ion chromatographs of broccoli sprouts and mature market stage broccoli. The paired ion chromatographs were prepared according to the method developed in our laboratory by Prestera et al., *Anal. Biochem.* 239: 168-179 (1996). Shaded peaks on the chromatograph represent glucoraphanin, glucoerucin, glucobrassicin and neoglucobrassicin, respectively. The former two glucosinolates are alkylthioglucosinolates with potent Phase 2 enzyme inducer activity and are the predominant glucosinolates found in sprouts. The latter two glucosinolates are indole glucosinolates which predominate in mature market stage broccoli.

13. Recent studies have shown that sulforaphane (the hydrolysis product of glucoraphanin which is the principal

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inducer precursor in sprouts) has a number of favorable properties with respect to its use as a chemoprotector. Sulforaphane inhibits mammary tumor formation in female Sprague-Dawley rats treated with single doses of dimethylbenzanthracene. Zhang *et al.*, *Proc. Natl. Acad. Sci. USA* 91: 3147-3150 (1994). Sulforaphane shows exceedingly potent inhibitory activity against DMBA-induced neoplastic mammary lesions in mouse mammary gland explants in culture: 84, 56, and 34% inhibition at 1  $\mu$ M, 100 nM, and 10 nM concentrations, respectively. Gerhauser *et al.*, *Cancer Research* 57: 272-278 (1997). Sulforaphane is not itself genotoxic (*i.e.*, does not produce unscheduled DNA synthesis) but inhibits the genotoxicity of N-nitrosodimethylamine (NDMA) in *Salmonella typhimurium* and NDMA-induced unscheduled DNA synthesis in mouse hepatocytes. Barcelo *et al.*, *Carcinogenesis* 17: 277-282 (1996). Sulforaphane has the unusual property of inhibiting cytochrome P-450 type 2E1 which is involved in the metabolic activation of carcinogenic nitrosamines. Barcelo *et al.*, *Carcinogenesis* 17: 277-282 (1996).

14. The indole glucosinolates do not give rise to isothiocyanates upon myrosinase hydrolysis because the indole isothiocyanates are unstable. One major degradation product is indole-3-carbinol which has attracted a great deal of recent attention. Although this compound exerts anticarcinogenic activity in some experimental tumor systems when administered before the carcinogen, it has obvious tumor-promoting properties if given after the carcinogen. Indole-3-carbinol has a number of other undesirable properties that raise questions with respect to the advisability of its use in chemoprotection. Thus, indole-3-carbinol is: (1) a very weak Phase 2 enzyme inducer; (2) is converted (especially at the acid pH prevailing in the stomach) to dimeric and trimeric condensation products that bind with very high affinity to the Ah receptor and thereby induce certain

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cytochromes P-450 that activate carcinogens, i.e., it is a bifunctional inducer that elevates both Phase 1 and Phase 2 enzymes; and (3) upon chronic administration enhances carcinogenic activity. Such continuous administration represents a likely scenario in any chemoprotective strategy, and indole glucosinolates are therefore not very desirable agents for these purposes.

15. The undersigned declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent resulting therefrom.

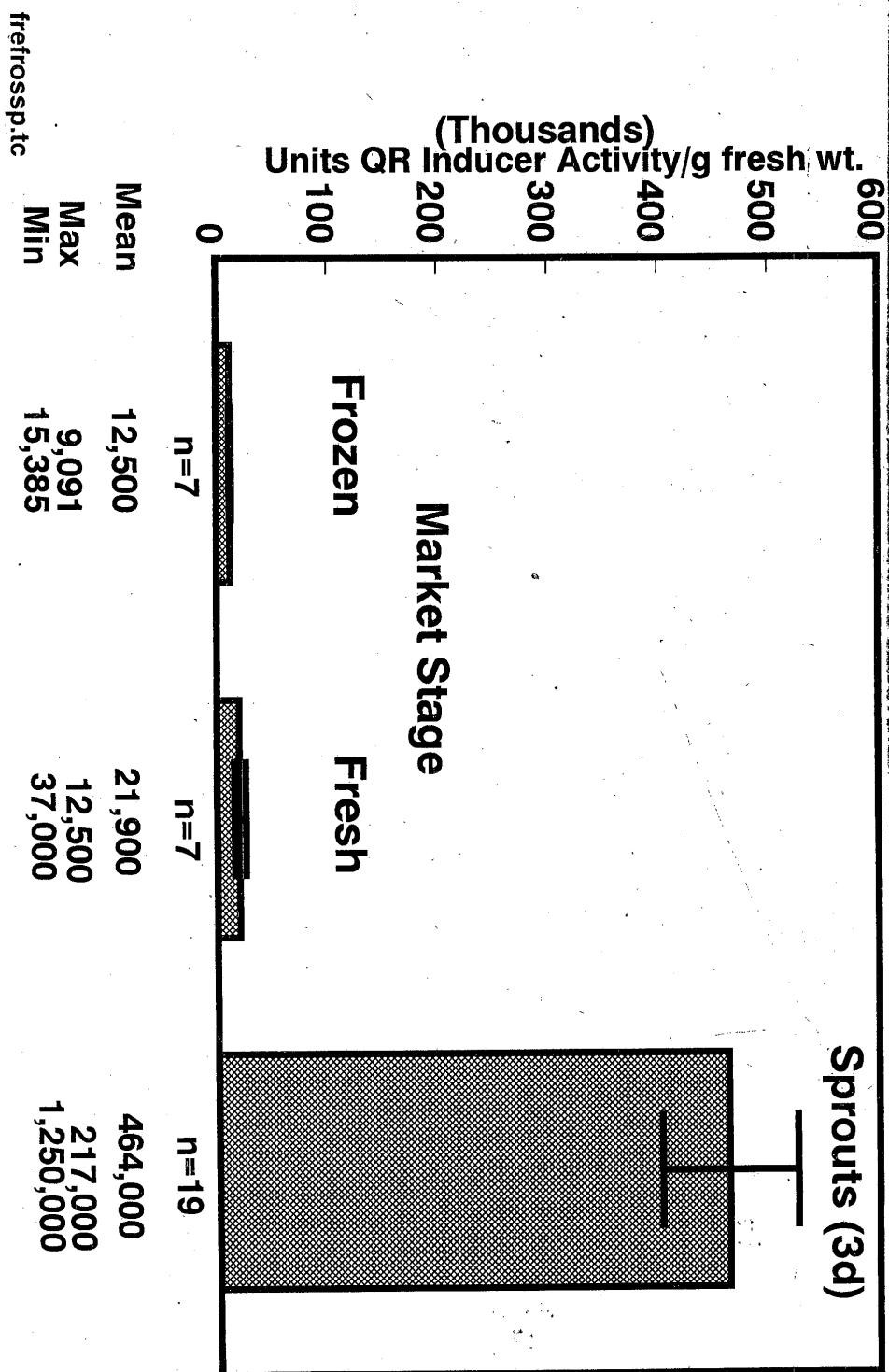
March 13, 1997  
Date

Paul Talalay  
Paul Talalay

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## Phase 2 Enzyme Inducer Activity of Broccoli

Data [except for frozen] from Tables 1 & 3 of Patent Application

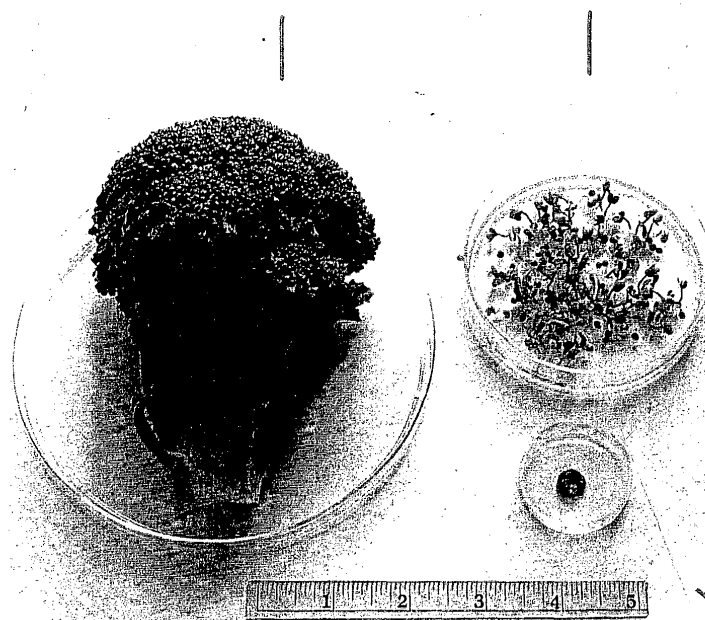


2

## BROCCOLI

MARKET STAGE  
(150 GRAMS)

3-DAY SPROUTS  
(3 GRAMS)



FREEZE DRIED WATER EXTRACT  
OF 3-DAY SPROUTS  
(150 MG)

ALL PREPARATIONS CONTAIN THE SAME QUANTITY  
(2-1/4 MILLION UNITS) OF ANTICARCINOGENIC  
ENZYME INDUCER ACTIVITY

3

## PAIRED ION CHROMATOGRAPHY SHOWING GLUCOSINOLATE PROFILES OF BROCCOLI (cv. SAGA)

### 5 DAY SPROUTS

Glucoraphanin

5.5 mg

990 Units

Main Peak

Amount analyzed  
(fresh wt. equiv)

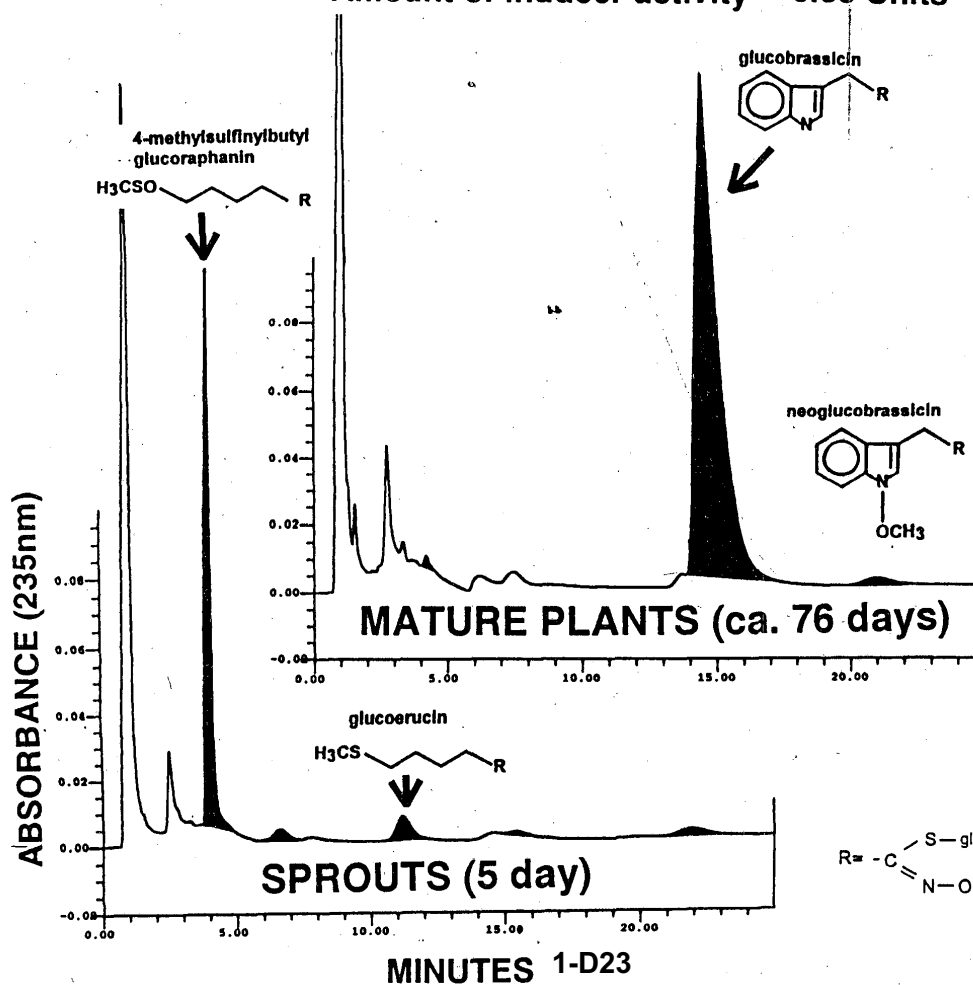
Amount of inducer activity

### MATURE PLANTS

Glucobrassicin

14.6 mg

9.38 Units





UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

FOLEY AND LARONER  
3000 K STREET NW  
SUITE 500  
WASHINGTON DC 20007-5109

13M1/0523

EXAMINER	
BURNS, L.	
ART. UNIT	PAPER NUMBER
1302	9

DATE MAILED: 05/23/97

Please find below a communication from the EXAMINER in charge of this application.

Commissioner of Patents

This application is in condition for allowance except for the presence of claims 1-20, 27, 35, and 39-47 drawn to an invention non-elected with traverse in Paper No. 4. Applicant is given ONE MONTH or THIRTY DAYS from the date of this letter, whichever is longer, to cancel the noted claims or take other appropriate action (37 CFR 1.144). Failure to take action during this period will be treated as authorization to cancel the noted claims by Examiner's Amendment and pass the case to issue. Extensions of time under 37 CFR 1.136(a) will not be permitted since this application will be passed to issue.

The prosecution of this case is closed except for consideration of the above matter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Wong whose telephone number is (703) 308-1979. The examiner can normally be reached on Tuesday-Thursday from 6:30 AM to 5:00 PM.

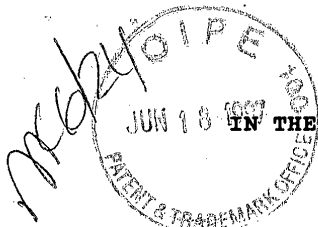
The fax number for this Group is (703) 305-3602.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.

*Leslie Wong*

Leslie Wong  
Primary Examiner  
Art Unit 1302

LAW  
May 22, 1997



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 46528/102/JOHO

10/A  
6-26-97  
DW

In re patent application of

Jed FAHEY et al.

Group Art Unit: 1302

Serial No. 08/528,858

Examiner: L. Wong

Filed: September 15, 1995

For: CANCER CHEMOPROTECTIVE FOOD PRODUCTS

AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In response to the Communication mailed May 23, 1997, applicants respectfully request that the examiner make the following changes to the application:

IN THE CLAIMS:

Please cancel claims 1-20, 27, 35 and 39-47, without prejudice or disclaimer.

REMARKS

Claims 1-20, 27, 35 and 39-47 were withdrawn from consideration in the instant case, as these claims were drawn to an invention non-elected, with traverse. Pursuant to the examiner's Communication dated May 23, 1997, claims 21-26, 28-34 and 36-38 are in condition for allowance and an early notice to this effect is earnestly solicited.


RECEIVED  
GROUP 1800  
97 JUN 23 PM 2:28

Serial No. 08/528,858

Should there be any questions regarding this application, Examiner Wong is invited to contact the undersigned at the number shown below.

Respectfully submitted,

June 18, 1997  
Date

  
Richard C. Peet  
Reg. No. 35,792

FOLEY & LARDNER  
Suite 500  
3000 K Street, N.W.  
Washington, D.C. 20007-5109  
(202) 672-5300

SENT BY:FOLEY & LARDNER, WASH.; 8-12-97; 3:38PM;FOLEY & LARDNER,DC B-\*6-0465850102-#####;# 1/ 2

**FOLEY & LARDNER**

WASHINGTON HARBOR  
3000 K STREET, N.W., SUITE 500  
WASHINGTON, D.C. 20007-5109  
(202) 672-5300

**FACSIMILE**  
**(202) 672-5399**

**TELEX 904136**

**CONFIRMATION**  
**(202) 672-5340**

**FACSIMILE COVER SHEET**

FROM: Richard C. Peet DATE: August 12, 1997

Number of pages, including this cover sheet: 2

TO: Examiner L. Wong, Group 1302

FIRM: USPTO - GROUP 1302

RE: 08/528,858 046585/0102

FACSIMILE NO.: 703-305-3602

IF YOU DO NOT RECEIVE ALL PAGES OR ARE HAVING TROUBLE, PLEASE CALL  
Wendy Huber 202-672-5476

The information contained in this facsimile message is intended only for the personal and confidential use of the designated recipients named above. This message may be an attorney-client communication, and as such is privileged and confidential. If the reader of this message is not the intended recipient or an agent responsible for delivering it to the intended recipient, you are hereby notified that you have received this document in error, and that any review, dissemination, distribution or copying of this message is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us by mail. Thank you.

SENT BY: FOLEY & LARDNER, WASH.; 8-12-97; 3:39PM; FOLEY & LARDNER, DC B-\*6-0465850102-\$\$\$; # 2/ 2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 046528/0102

In re patent application of

Jed FAHEY et al.

Group Art Unit: 1302

Serial No.: 08/528,858

Examiner: L. Wong

Filed: September 15, 1995

For: CANCER CHEMOPROTECTIVE FOOD PRODUCTS

ASSOCIATE POWER OF ATTORNEY

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

OFFICIAL

Sir:

The undersigned attorney of record hereby appoints Richard C. Peet as associate attorney with full power of association, substitution and revocation, to prosecute the above-identified application and transact all business in the Patent and Trademark Office connected therewith.

All correspondence should continue to be sent to the undersigned.

Respectfully submitted,

Aug. 12, 1997  
Date

Bernhard D. Saxe  
Reg. No. 28,665

FOLEY & LARDNER  
Suite 500  
3000 K Street, N.W.  
Washington, DC 20007-5109  
(202) 672-5300



UNITED STATES DEPARTMENT OF COMMERCE  
 Patent and Trademark Office  
 Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
 Washington, D.C. 20231

08/528858 SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKETT NO.
----------------------------	-------------	-----------------------	----------------------

EXAMINER
----------

ART UNIT	PAPER NUMBER
----------	--------------

DATE MAILED: 8-14-97

## EXAMINER INTERVIEW SUMMARY RECORD

All participants (applicant, applicant's representative, PTO personnel):

(1) Richard Reet (3)  
 (2) Leslie Wong (4)

Date of interview 8/12/97

Type: ☒ Telephonic ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).Exhibit shown or demonstration conducted: ☐ Yes ☒ No. If yes, brief description:Agreement ☒ was reached with respect to some or all of the claims in question. ☐ was not reached.

Claims discussed: 28

Identification of prior art discussed:

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: Applicant agreed to replace "according to claim 1" with the limitations of claim 1. Amendment was necessary as claim 1 has been cancelled.

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

☒ It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph below has been checked to indicate to the contrary, A FORMAL WRITTEN RESPONSE TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of this form). If a response to the last Office action has already been filed, then applicant is given one month from this interview date to provide a statement of the substance of the interview.

- ☐ 2. Since the examiner's interview summary above (including any attachments) reflects a complete response to each of the objections, rejections and requirements that may be present in the last Office action, and since the claims are now allowable, this completed form is considered to fulfill the response requirements of the last Office action. Applicant is not relieved from providing a separate record of the substance of the interview unless box 1 above is also checked.

1-D29

Examiner's Signature


**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

 Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
 Washington, D.C. 20231

SERIAL NUMBER 08/14/97	FILING DATE 08/14/97	FAHEY	FIRST NAMED APPLICANT J	ATTORNEY DOCKET NO. 45525/102/10
---------------------------	-------------------------	-------	----------------------------	-------------------------------------

 FOLEY AND LARDNER  
 3000 K STREET NW  
 SUITE 500  
 WASHINGTON DC 20007-5109

13M1/0814

EXAMINER WONG, L
---------------------

ART UNIT 1302	PAPER NUMBER
------------------	--------------

08/14/97

DATE MAILED:

 13  
 ent. 13  
 LAW  
 8/13/97
**NOTICE OF ALLOWABILITY****PART I.**

1. ☒ This communication is responsive to papers filed 6/18/97.
2. ☒ All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due course.
3. ☒ The allowed claims are 21-26, 28-34, and 36-38.
4. ☐ The drawings filed on \_\_\_\_\_ are acceptable.
5. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received. ☐ not been received. ☐ been filed in parent application Serial No. \_\_\_\_\_, filed on \_\_\_\_\_.
6. ☒ Note the attached Examiner's Amendment.
7. ☒ Note the attached Examiner Interview Summary Record, PTOL-413.
8. ☒ Note the attached Examiner's Statement of Reasons for Allowance.
9. ☐ Note the attached NOTICE OF REFERENCES CITED, PTO-892.
10. ☐ Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449.

**PART II.**

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

1. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
2. ☒ APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER.
  - a. ☒ Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. 0. CORRECTION IS REQUIRED.
  - b. ☐ The proposed drawing correction filed on \_\_\_\_\_ has been approved by the examiner. CORRECTION IS REQUIRED.
  - c. ☐ Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED.
  - d. ☒ Formal drawings are now REQUIRED.

Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER.

**Attachments:**

- ☒ Examiner's Amendment
- ☒ Examiner Interview Summary Record, PTOL-413
- ☒ Reasons for Allowance
- ☐ Notice of References Cited, PTO-892
- ☐ Information Disclosure Citation, PTO-1449

- ☐ Notice of Informal Application, PTO-152
- ☐ Notice re Patent Drawings, PTO-948
- ☐ Listing of Bonded Draftsmen
- ☐ Other

Serial Number: 08/528858

Page 2

Art Unit: 1302

#### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Richard C. Peet on August 12, 1997.

The application has been amended as follows:

#### **IN THE TITLE:**

Change the title to -- METHOD OF PREPARING A FOOD PRODUCT FROM CRUCIFEROUS SEEDS --.

#### **IN THE SPECIFICATION:**

Claim 28, line 3, delete -- "according to claim 1" -- and insert -- , with the exception of cabbage, cress, mustard and radish sprouts, harvested prior to the 2-leaf stage, --.

#### **IN THE ABSTRACT:**

Delete the Abstract and insert the attached Abstract on a separate sheet.

Serial Number: 08/528858

Page 3

Art Unit: 1302

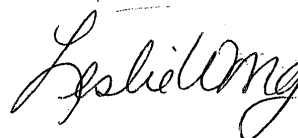
The following is an examiner's statement of reasons for allowance: a method of preparing a food product wherein cruciferous sprouts, with the exception of cabbage, cress, mustard, and radish sprouts are harvested prior to the 2-leaf stage is not taught nor fairly suggested by the prior art or any combination thereof.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Wong whose telephone number is (703) 308-1979. The examiner can normally be reached on Tuesday-Thursday from 6:30 AM to 5:00 PM.

The fax number for this Group is (703) 305-3602.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.



**Leslie Wong**  
**Primary Examiner**  
**Art Unit 1302**

LAW  
August 13, 1997

04528,858

**ABSTRACT**

3, A method of preparing a food product rich in glucosinolates wherein cruciferous seeds, with the exception of cabbage, cress, mustard and radish seeds, are germinated, and sprouts are harvested prior to the 2-leaf stage, to form a food product containing a plurality of sprouts.



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: Box ISSUE FEE  
ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D.C. 20231

**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

13M1/0814

FOLEY AND LARDNER  
3000 K STREET NW  
SUITE 500  
WASHINGTON DC 20007-5109

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/528,858	09/15/95	016	WONG, L 1302	08/14/97
First Named Applicant: FAHEY, JED W.				

TITLE OF INVENTION: METHOD OF PREPARING A FOOD PRODUCT FROM CRUCIFEROUS SEEDS  
(AS AMENDED)

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
1 46528/102/JO	426-049.000	043	UTILITY	YES	\$645.00	11/14/97

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

- I. Review the SMALL ENTITY status shown above.  
If the SMALL ENTITY is shown as yes, verify your current SMALL ENTITY status:

- A: If the status is changed, pay twice the amount of the FEE DUE shown and notify the Patent and Trademark Office of the change in status, or  
B: If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A: Pay FEE DUE shown above, or  
B: File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

- II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "6b" of Part B should be completed.

- III. All communications regarding this application must give application number and batch number.  
Please direct all communication prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Patents Issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 46528/102/JOHO

In re patent application of Batch No. Q43  
Jed FAHEY et al. Group Art Unit: 1302  
Serial No. 08/528,858 Examiner: L. Wong  
Filed: September 15, 1995 Allowed: 08-14-97  
For: METHOD OF PREPARING A FOOD PRODUCT  
FROM CRUCIFEROUS SEEDS (AS AMENDED)

LETTER

Honorable Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231

Sir:

Applicants respectfully request that printing of the above-identified application, for which a Notice of Allowance and Issue Fee Due was mailed on August 14, 1997, be expedited due to the great commercial importance of this patent to applicants. The Formal Drawings and Issue Fee Transmittal, together with a check in the amount of \$645.00 is filed concurrently herewith. The Commissioner is authorized to charge any deficiency to Deposit Account No. 19-0741.

Respectfully submitted,

September 22, 1997  
Date

Richard C. Peet  
Richard C. Peet  
Reg. No. 35,792

FOLEY & LARDNER  
Suite 500  
3000 K Street, N.W.  
Washington, D.C. 20007-5109  
(202) 672-5300

①  
L.W.N.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 46528/102/JOHO

In re patent application of Batch No. Q43  
Jed FAHEY et al. Group Art Unit: 1302  
Serial No. 08/528,858 Examiner: L. Wong  
Filed: September 15, 1995 Allowed: 08-14-97  
For: METHOD OF PREPARING A FOOD PRODUCT  
FROM CRUCIFEROUS SEEDS (AS AMENDED)

SUBMISSION OF FORMAL DRAWINGS

Honorable Commissioner of  
Patents and Trademarks  
Washington, D.C. 20231  
Attn: Publication Branch

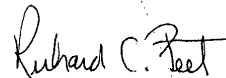
RECEIVED  
Publication Branch  
SEP 23 1997

Sir:

Applicants submit the attached formal drawings in the  
above-identified application.

Respectfully submitted,

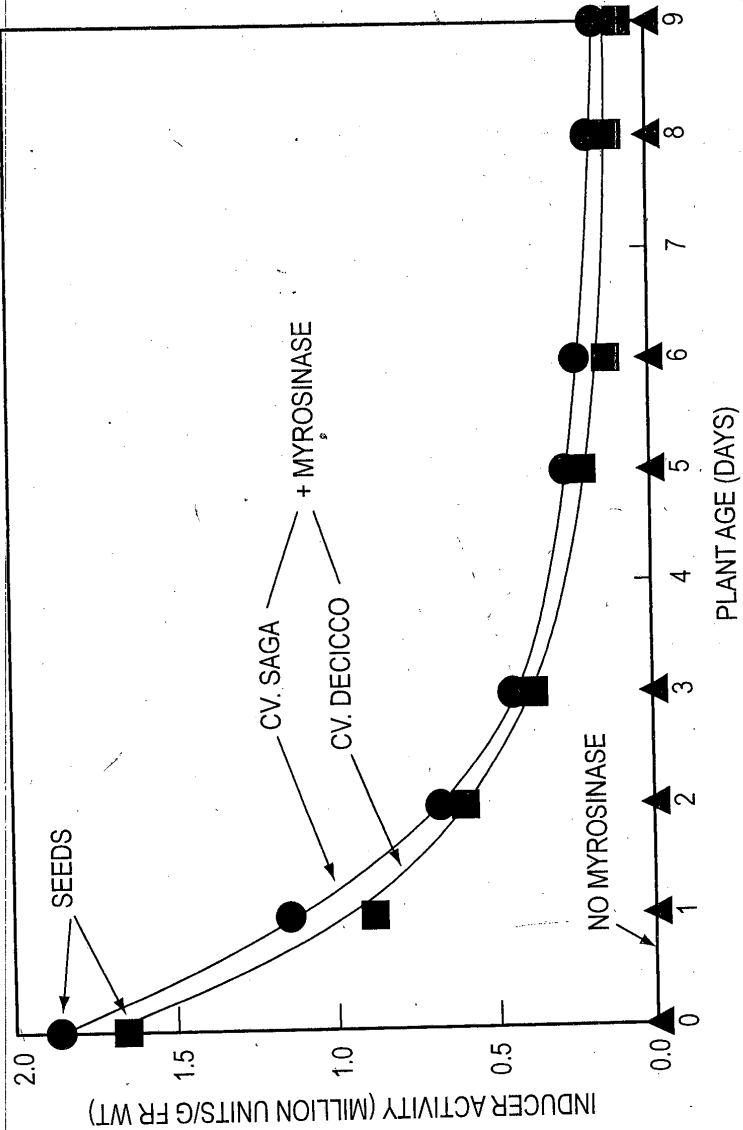
September 22, 1997  
Date

  
Richard C. Peet  
Reg. No. 35,792

FOLEY & LARDNER  
Suite 500  
3000 K Street, N.W.  
Washington, D.C. 20007-5109  
(202) 672-5300

APPROVED	O.G. FIG. 1
BY	CLASS
DRAFTSMAN	SUBCLASS

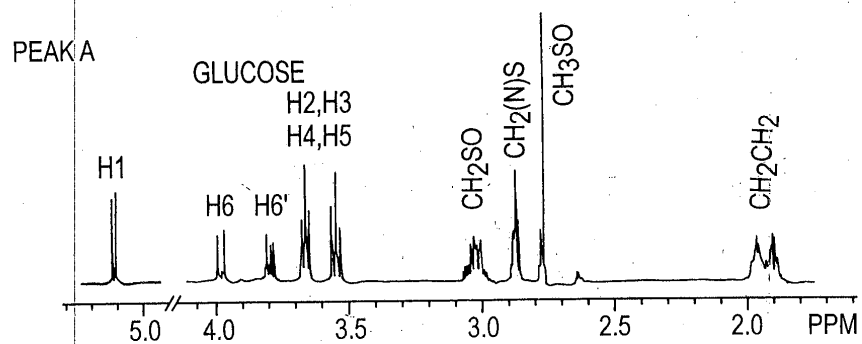
FIG. 1



▲ = < 1000 UNITS/G FR WT

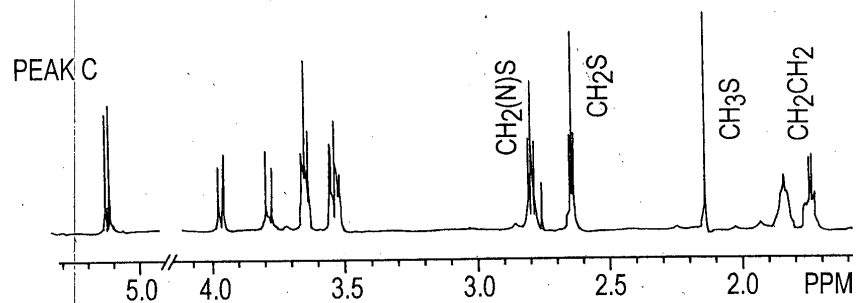
5725895

FIG. 2A



APPROVED	OG. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

FIG. 2B



## ART B—ISSUE FEE TRANSMITTAL

**MAILING INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE. Blocks 2 through 6 should be completed where appropriate. All further correspondence including the issue fee receipt, the Patent, advance orders and notification of maintenance fees will be mailed to addresses entered in Block 1 unless you direct otherwise, by: (a) specifying a new correspondence address in Block 3 below, or (b) providing the PTO with a separate "FEE ADDRESS" for maintenance fee notifications with the payment of issue fee or thereafter. See reverse for Certificate of Mailing, below.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**Burden Hour Statement:** This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

## 1. CORRESPONDENCE ADDRESS

FOLEY AND LARDNER  
3000 K STREET NW  
SUITE 500  
WASHINGTON DC 20007-5109

13M1/8814

## 2. INVENTOR(S) ADDRESS CHANGE (Complete only if there is a change)

INVENTOR'S NAME

Street Address

City, State and Zip Code

CO-INVENTOR'S NAME

Street Address

City, State and Zip Code

☐ Check if additional changes are enclosed

APPLICATION NO.

FILING DATE

TOTAL CLAIMS

EXAMINER AND GROUP ART UNIT

DATE MAILED

08/528,858

09/15/95

016

WONG, L

1302

08/14/97

First Named  
Applicant

FAHEY,

JED W.

TITLE OF  
INVENTION  
METHOD OF PREPARING A FOOD PRODUCT FROM CRUCIFEROUS SEEDS  
(AS AMENDED)

ATTY'S DOCKET NO.

CLASS-SUBCLASS

BATCH NO.

APPLN. TYPE

SMALL ENTITY

FEE DUE

DATE DUE

1

46528/102/JO

426-049.000

Q43

UTILITY

YES

\$645.00

11/14/97

## 3. Correspondence address change (Complete only if there is a change)

4. For printing on the patent front page, list the names of not more than 3 registered patent attorneys or agents OR, alternatively, the name of a firm having as a member a registered attorney or agent. If no name is listed, no name will be printed.

1 FOLEY &amp; LARDNER

2

3

## 5. ASSIGNMENT DATA TO BE PRINTED ON THE PATENT (print or type)

(1) NAME OF ASSIGNEE

JOHNS HOPKINS SCHOOL OF MEDICINE

(2) ADDRESS (CITY &amp; STATE OR COUNTRY)

BALTIMORE, MD

10/28/1997 BSTEWART 00000247 08528858

01 FC:561

45.00 CH

A. ☐ This application is NOT assigned.☒ Assignment previously submitted to the Patent and Trademark Office.☐ Assignment is being submitted under separate cover. Assignment should be directed to Box ASSIGNMENTS.

**PLEASE NOTE:** Unless an assignee is identified in Block 5, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a substitute for filing an assignment.

10/28/1997 BSTEWART 00000247 08528858

01 FC:242

645.00 BP

Certificate of Mailing

Note: If this certificate of mailing is used, it can be used to transmit the Issue Fee. This certificate cannot be used for any other accompanying papers.

Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Box ISSUE FEE  
Assistant Commissioner for Patents  
Washington, D.C. 20231

on: \_\_\_\_\_ (Date)

\_\_\_\_\_  
(Name of person making deposit)\_\_\_\_\_  
(Signature)\_\_\_\_\_  
(Date) 1-D39

6a. The following fees are enclosed:

☒ Issue Fee ☐ Advance Order - # of Copies \_\_\_\_\_

6b. The following fees should be charged to:

DEPOSIT ACCOUNT NUMBER \_\_\_\_\_

(ENCLOSE A COPY OF THIS FORM)

☒ Issue Fee ☒ Advance Order - # of Copies 15☐ Any Deficiencies in Enclosed Fees

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature) Bernhard D. Saxe (Date) 09-23-97  
Reg. # 28,665

NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

The  
United  
States  
of  
America



PTO UTILITY GRANT

Paper Number 16

### The Commissioner of Patents and Trademarks

*Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

Therefore, this

### United States Patent

*Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.*

*If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.*

*If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to an statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.*

*Bruce Lehman*  
Commissioner of Patents and Trademarks

Attest

*Mary H. Green*

Form PTO-1584 (Rev. 2/97)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of

Jed W. FAHEY et al.

Serial No.: 08/528,858

Group Art Unit: 1302

Filed: September 15, 1995

Examiner: Wong, L.

For: METHOD OF PREPARING A FOOD  
PRODUCT FROM CRUCIFEROUS SEEDS

**INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR §1.56 and §1.97**

Assistant Secretary and Commissioner  
of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Submitted herewith on a modified Form PTO-1449 is a listing of a document which first became known to applicants after payment of the issue fee and within three months of filing of this statement. This document is being submitted to comply with applicants' duty of disclosure pursuant to 37 CFR §1.56. A copy of the listed document is being submitted.

The submission of the document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action that would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a prima facie prior art reference against the claims of the present application.

Serial No: 08/528,858

TIMING OF THE DISCLOSURE

The instant Information Disclosure Statement is being filed after the payment of the issue fee but before grant of the patent. Accordingly, pursuant to 37 CFR §1.97(i), applicants understand that the Information Disclosure Statement and accompanying document will be placed in the file, but will not be considered by the Office.

CERTIFICATION

The undersigned hereby certifies in accordance with 37 CFR §1.97(e)(2) that the document cited in this Information Disclosure Statement was not cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge, after making reasonable inquiry, was not known to any individual designated in § 1.56(c) more than three months prior to the filing of the Statement.

RELEVANCE OF EACH DOCUMENT

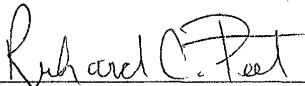
The document listed on the attached PTO-1449 discloses that broccoli sprouts contain sulphoraphane, a type of glucosinolate. However, *inter alia*, this document neither discloses that broccoli sprouts are rich in glucosinolates, nor teaches a method of preparing a food product rich in glucosinolates, for example, having at least 200,000 units per gram of fresh weight of Phase 2-inducing potential, nor teaches when to harvest the sprouts to achieve these results, as claimed in the present invention.

Applicants respectfully request that this listed document be placed in the file.

Serial No: 08/528,858

Respectfully submitted,

January 26, 1998  
Date

  
Richard C. Peet  
Reg. No. 35,792

FOLEY & LARDNER  
3000 K Street, N.W., Suite 500  
Washington, DC 20007-5109  
Tel: (202) 672-5300

IPT-212(a):4/90

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 046528/0102

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In re patent application of Batch No.: Q43  
Jed FAHEY et al. Allowed: August 14, 1997  
Serial No. 08/528,858 Group Art Unit: 1302  
Filed: September 15, 1995 Examiner: L. Wong  
For: METHOD OF PREPARING A FOOD PRODUCT FROM CRUCIFEROUS SEEDS

ASSOCIATE POWER OF ATTORNEY

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

The undersigned attorney of record hereby appoints the following as associate with full power of association, substitution and revocation, to prosecute the above-identified application and transact all business in the Patent and Trademark Office connected therewith:

Jayme Huleatt, Registration No. 34,485

All correspondence should continue to be sent to the undersigned.

Respectfully submitted,

January 26, 1998  
Date

FOLEY & LARDNER  
Suite 500  
3000 K Street, N.W.  
Washington, DC 20007-5109  
(202) 672-5300

Bernhard D. Saxe  
Registration No. 28,665

3/2/98



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/528,858	09/15/95	FAHEY	46528/102/J0

FOLEY AND LARDNER  
3000 K STREET, NW  
SUITE 500  
WASHINGTON DC 20007-5109

A3M1/0302

EXAMINER  
WONG, L.

ART UNIT	PAPER NUMBER
1302	

DATE MAILED: 03/02/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/528,858	09/15/95	FAHEY J	46528/102/JC

FOLEY AND LARDNER  
3000 K STREET NW  
SUITE 500  
WASHINGTON DC 20007-5109

ASM1/0302

EXAMINER	
WONG, L	
ART UNIT	PAPER NUMBER
1302	19

DATE MAILED: 03/02/98

Please find below a communication from the EXAMINER in charge of this application.

Commissioner of Patents

Applicant's information disclosure statement of January 27, 1998, was filed after the issue fee was paid. Information disclosure statements filed after payment of the issue fee will not be considered, but will be placed in the file. However, the application may be withdrawn from issue in order to file a continuing application under 37 CFR 1.53(b) or 1.53(d) upon the grant of a petition filed under the provisions of 37 CFR 1.313(b)(5). Alternatively, the other provisions of 37 CFR 1.313 may apply, e.g., a petition to withdraw the application from issue under the provisions of 37 CFR 1.313(b)(3) may be filed together with an unequivocal statement by the applicant that one or more claims are unpatentable over the information contained in the statement. The information disclosure statement would then be considered upon withdrawal of the application from issue under 37 CFR 1.313(b)(3).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Wong whose telephone number is (703) 308-1979. The examiner can normally be reached on Tuesday-Thursday from 6:30 AM to 5:00 PM.

*Leslie Wong*  
Leslie Wong  
Primary Examiner  
Art Unit 1302

LAW  
February 26, 1998  
08/528858

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 046585/0102

In re patent application of

Jed FAHEY et al.

Serial No. 08/528,858

Filed: September 15, 1995

For: METHOD OF PREPARING A FOOD PRODUCT FROM CRUCIFEROUS SEEDS

Patent No. 5,725,895

Issued: March 10, 1998

Group Art Unit: 1302

Examiner: L. Wong

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TC-1700-MAIL ROOM  
OCT 19 1999  
TC-1700-MAIL ROOM**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 C.F.R. §1.56**Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Submitted herewith on a modified Form PTO-1449 is a listing of documents known to patentee in order to comply with applicant's duty of disclosure pursuant to 37 C.F.R. §1.56, and in view of MPEP § 2001.06(c). The listed documents became known to patentee incident to a suit for infringement of the above-captioned patent filed by patentee in the District Court of Delaware.

The accompanying Form PTO-1449 lists several papers and publications that were provided during the course of discovery in the infringement suit. In addition, the defendants have recently filed a request for reexamination of the above-captioned patent citing several of the listed papers and publications.

Patentee believes that the documents listed in the accompanying Form PTO-1449 do not adversely impact the patentability of the claims of the above-captioned patent. However, out of an abundance of caution, and in compliance with the duty of disclosure, patentee hereby brings these documents to the attention of the Patent Office.

In the course of the infringement suit, the defendants also have lodged several affirmative defenses and counterclaims, including (1) invalidity and unenforceability for failure to comply with the provisions of 35 U.S.C. §§ 101, 102, 103, and 112, (2) breach of the duty to disclose material information, and (3) patent misuse. Provided herewith is a

U.S. Patent No. 5,725,895  
U.S. Serial No. 08/528,858

Attorney Docket No. 046585/0102

copy of the defendants' "Answer, Affirmative Defenses and Counterclaim," which contains these allegations.

Patentee believes that the foregoing affirmative defenses and counterclaims are without merit. However, out of an abundance of caution, and in compliance with the duty of disclosure, patentee hereby brings these documents to the attention of the Patent Office.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present patent or is considered to be material to patentability as defined in 37 C.F.R. §1.56(b). Patentee does not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a prima facie prior art reference against the claims of the present patent.

Since the above identified patent has issued, it is respectfully requested that this Information Disclosure Statement and the listed documents be placed in the file of the present patent, pursuant to 37 C.F.R. §1.97(i).

Respectfully submitted,

October 18, 1999  
Date

Richard C. Peet  
Richard C. Peet  
Registration No. 35,792

FOLEY & LARDNER  
3000 K Street, NW, Suite 500  
Washington, DC 20007-5109  
(202) 672-5300

If there are any fees due which are not enclosed herewith, including any fees required for an extension of time, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account Number 19-0741.

SHEET 1 of 2			
FORM PTO 1449 (modified)		ATTY DOCKET NO. 046585/0102	SERIAL NO. 08/528,858
U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		APPLICANT Jed FAHEY et al.	PATENT NO. 5,725,895
LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)		FILING DATE September 15, 1995	GROUP 1302
Date Submitted to PTO: October 18, 1999			
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)			
		The Sproutletter, Number 25, Nov. - Dec. 1984	
		"The Sproutletter" May-June 1981, No. 4.	
		Roy Bruder, Ph.D., Discovering Natural Foods, (including pgs.203-209), Woodbridge Press, 1982.	
		Brian R. Clement, Hippocrates Health Program, (including pgs 7-11), Hippocrates Publications, 1989.	
		Jethro Kloss, The Back to Eden Cookbook, pgs. 61-61, Woodbridge Press, 1974.	
		Steve Meyerowitz, Sproutmann Kitchen Garden Cookbook, The Sprouhouse, Inc., pgs. 178-179, 290, 1994.	
		Steve Meyerowitz, Sprout It, One week from Seed to Salad, The Sprouhouse, Inc., (including pgs. 84-85, 120-123), June 1994.	
		Steve Meyerowitz, The Complete Guide to Sprouting, Sprouts The Miracle Food, Sproutman Publications, (including pgs. 121-2), May 1998.	
		Esther Munroe, Sprouts to Grow and Eat, (including pgs. 2-15), Dec. 1974.	
		Jean Hewitt, The New York Times "New Natural Foods Cookbook", Avon Books, pgs. 200-203, 1982.	
		Martha H. Oliver, Add a Few Sprouts To Eat Better for Less Money, Pivot Original Health Books, (including pgs. 52-53, 118-119), 1975.	
		James C. Schmidt, Horticulture Facts, "Growing Sprouts Indoors", (Rev. 4/81).	
		Angnes Toms, The Joy of Eating Natural Foods, The Complete Organic Cookbook, pgs. 318-319, Nov. 1971.	
		Karen Cross Whyte, The Complete Sprouting Cookbook, Troubador Press, (including pgs. 57-59), 1973.	
		Ann Wigmore, The Sprouting Book, Avery Publications, (including pgs. 29-37), 1986.	
		Debra Schwarze, Growing Sprouts, Neb Guide, Jan. 1989.	
		John Tobe, Sprouts Elixir of Life", 1970.	
		Alicia Bay Laurel, "Living on the Earth" a Vintage Book.	
		David Ehrlich with George Wolf, Foreward by Peter Albright, M.D., "The Bowell Book", Schocken Books, 1981.	
		"The Good News Sprouts Recipe Book" ISGA, Aug. 1992.	
		Ann Wigmore, "The Hippocrates Diet and Health Program", Avery Publications, 1984.	
		Sprouting Publications Oahspe Foundation, Health and Sprouting Supplies.	
		Sproutletter, #41, Summer, 1989.	
		The Sproutletter, Number 27, March-April 1985.	
		Steve Meyerowitz, Growing Vegetables Indoors", 1983.	
		The Sproutletter, Number 24, Sept.-Oct. 1984.	
		The Sproutletter, Issue 33, Spring 1987.	
		The Sproutletter, Number 28, May-June 1985.	
		The Sproutletter, Number 26, Jan-Feb 1985.	
		Sprouting Publications, Health and Sprouting Supplies.	

SHEET <u>2 of 2</u>			
FORM PTO 1449 (modified)		ATTY DOCKET NO. 046585/0102	SERIAL NO. 08/528,858
U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		PATENT NO. 5,725,895	
LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)		APPLICANT Jed FAHEY et al.	
Date Submitted to PTO: October 18, 1999		FILING DATE September 15, 1995	GROUP 1302
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)			
			The Sproutletter, Number 29, July - August 1985.
			Sproutletter, #40, Spring, 1989.
			The Sproutletter, Number 32, Summer.
			Sproutletter, #44, March 1991.
			Sproutletter, #36, Winter, 1987-88.
			Sproutletter, #39, Fall, 1988.
			Sproutletter, #43, May/June 1990.
			Sproutletter, #38, Summer, 1988.
			Sprouting Publications Health and Sprouting Supplies.
			Spring Sale for Members Only.
			The Sproutletter, A newsletter of useful and unusual information on sprouts, raw foods and nutrition.
			The Sproutletter, #31, Winter.
			Deirdre Purdy, ed., The Summer Kitchen, A Farmers' Market Cookbook, 1981.
			Viktoras Kulvinskas, M.S. Co-Director Hippocrates Health Institute, "Love Your Body or how to be a live food lover", 1974.
			The Sprout House Article from Newspaper.
			New Prices - New Products, July 1985 order form.
			Steve Meyerowitz, Indoor Vegetable Kit, The Sprout House.
			The Sprout House Newsletter, Issue #15, August, 1992.
			Sproutman's Exotic Seeds for Sprouting 100% Organically Grown Order Form.
			Complaint for Patent Infringement (Brassica Protection Products, LLC v. The Sproutman, Inc. dated September 20, 1999.
			Murry Tizer's Answer, Affirmative Defenses and Counterclaims dated June 28, 1999
			The Sproutman, Inc.'s Answer, Affirmative Defenses and Counterclaims dated June 28, 1999
EXAMINER		DATE CONSIDERED	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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MAY 25 2008  
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OCT 19 1999  
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